

## **Accelerator Division EH&S Highlights April 2003**

### **Search for High Temperature Tape**

As a follow-up to the odor complaints associated with vacuum bakeout in the Source Lab, and the fire alarm incident associated with a vacuum bakeout, the Industrial Hygiene (IH) group began searching for a high temperature tape. With the help of Rick Gonzalez, a new source was found that may be a suitable replacement. The Engineering Department is reviewing the product data.

### **Hall B Truck Ramp Door**

Hall B truck ramp personnel door lock/frame is not closing properly again. The door lock status switch does not always seat properly and will drop the Hall to restricted access. The mortise frame was adjusted to make a better connection. This appears to work for now. The door and frame need to be replaced. Facilities Management scheduled the door replacement for the September 2003 shut-down.

### **EH&S Department Displays at JLab Open House**

All 5 technical elements of the EH&S Department [RadCon, IH, IS, PSS, & EH&S T3] prepared displays for the JLab Open House. The EH&S T3 group designed a poster on the EH&S Tracking System, EH&S electronic log and FEL ARR Tracking Matrix. They also had a poster on "Colorful Work Place Detectives." The latter was prepared in support of the hands on demonstrations provided at the EH&S T3 station showing how tests based on color changes are used to detect the presence of potential hazardous agents such as chemicals, UV light, and heat. The UV sensitive beads were a big hit as was the heat sensitive paper! SSG display was also a hit. Especially the green laser pointer and the run/safe box. There seems to be a primal satisfaction in hitting the crash button. The IH poster display on Chemical Safety at Work & Home and the controls which can be used to work safely with these chemicals drew a lot of interest as well. The EH&S department presented two other displays on radiation monitoring equipment and material handling.

### **Safety Systems Group's Transportainer is "Best in Show"**

The SSG won "best in show" for its transportainer during the recent inspections conducted by Joan Campbell. Other groups have been asked to look at the SSG transportainer which serves as a model for good practices in transportainer storage.

### **FEL ODH System Upgrades Complete**

There are now additional heads at the west end of the building (up and downstairs) and additional alarms in equipment areas.

### **Welding Machine Electrical Inspections Due**

The JLab welding machines are due for their annual electrical inspection. Presently there is no JLab coordinated process for arranging these inspections. Some welding supervisors took the initiative to arrange for their equipments' re-inspection and paid for the services via JLab credit cards. They later learned that paying for services on JLab credit cards is not permitted, so the question was posed as to how to accomplish annual welding machine inspections. S. Prior is coordinating with Procurement and the Electrical Safety Subcommittee to develop a Blanket Purchase Agreement (BPA).

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### **Subcontractors and Chemicals**

Rebecca Yasky, Facilities Management, has written an SOP which details the hazard communication requirements for subcontractors. The SOP addresses the need to have MSDSs for chemicals brought on site, and the requirement to provide and use protective equipment recommended by the MSDS. This will enhance our compliance with the Hazard Communication Standard.

### **Gas Cylinder Mislabeled**

A compressed gas cylinder labeled argon was used in the Production Cleanroom as calibration gas but the cylinder actually contained nitrogen. Bill Brisiel notified the Industrial Hygiene Group, who took the cylinder was taken out of service and recorded the markings. Luckily the PO number for the cylinder was on the cylinder contents tag. The information was relayed to Procurement, and the vendor will investigate all deliveries on that PO.

### **Follow up to Lift Gate Failure**

Further investigation into the lift gate failure that occurred on March 13, 2003 [see March 2003 Highlights] revealed the following:

- Technicians using the lift gate the day before the lift gate fell had trouble getting it to rise off the ground. They were instructed to lift it manually, lock it in place, and tag it out of service.
- Before locking it into place or tagging it, another technician asked to use the vehicle (same individual that experienced the lift gate falling). He was told about the problem and the need to lock it in place and tag it out of service.
- Vehicle was used but not locked or tagged out of service.
- The following day the lift gate was unlatched and proceeded to fall.
- It is believed that the lift gate, due to being manually lifted the day before, attempted to restore itself to its previous state, on the ground.
- Facilities Management took the truck to a vendor offsite for replacement of the lift gate. In addition, EES plans to put the lift gate on the Safety Warden's monthly inspection list. EES has also asked the vendor to provide an inspection/maintenance checklist for the SW to follow.
- EES personnel will also receive JLab specific training on things like; what to do if the lift fails and reporting procedures (who should be informed).

It is interesting to note that in April 2000, efforts were underway to develop "toolbox" training for JLab lift gate users on safe practices. The focus of the training was to 1) draw out the problems of abuse listed in the March 2000 DOE Lessons Learned by INEEL's Fleet Maintenance; 2) address each of Fleet's recommendations as they pertained to our lab; and, 3) provide instructions on what to do if a JLab worker experienced a problem with a lift gate. The training package was not completed nor was a request to include guidance on safe lift gate practices in material handling policy and procedures.

### **NRC "Pre-visit" on April 29, 2003**

The NRC staff conducted a pre-visit to familiarize themselves with JLab. The actual inspection visit will be scheduled later in July 2003. No special preparations were

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required for the pre-visit which consisted primarily of a site tour and discussions on interlock systems. Bob May, Kelly Mahoney, Steve Suhring, and Carter Ficklen were among those who met with the NRC staff. The OSHA counterpart inspection is scheduled for the week of August 11-15, 2003

### **EH&S Training Classroom Relocation**

EH&S Training classes are now being held in the RadCon Training Space as we make efforts to open up IH Lab space in the Industrial Hygiene Trailer, T35.

### **Acid Neutralization System**

The IH staff met with Dr. Schafran, Phil Mutton, John Mammosser, and Julian Gordon. A vendor was selected for the neutralization system. The group elected to go with the traditional pH adjusted coagulation/ precipitation method vs an ion exchange resin system. The main factors influencing the selection were:

- Metals removal experience of the vendor
- Maintenance costs associated with ion exchange resin systems
- Minimization of hazardous byproducts associated with the neutralization
- Ability of the system to either remove or tolerate the niobium loading

Dr. Schafran's assistance, along with the hard work of this team, was invaluable.

### **End Stations Fencing Modification**

Efforts are underway to modify fencing around end stations to capture more Radiologically Controlled Area (RCA). High current running (planned again for near future) creates the need. RadCon received a partial price on Hall dome fencing/dump building posting. To expand the fence line on both halls will be about \$2400. No price yet on the Bldg. 91 and 95 bollards.

### **Physics Experimental Modeling**

Pavel continues work on the new GEN experiment model with Glen Warren from Hall C and is consulting for Hall A on the neutron detector optimization calculations.

### **Hall C Proposed Experiments May Use 50% of Site Boundary Dose**

Hall C has requested a modification to the beam dump line configuration for two upcoming experiments. These are high current experiments with shallow spectrometer angles and Hall C wants a 2" vacuum pipe from the scattering chamber back to nearly the dump tunnel wall. Our estimates are that these two experiments will use up 50% of the site boundary dose, present a considerable Be-7 contamination increment in forced air cooling systems, increase the airborne radioactivity emissions, and add to the inventory of activated material in the hall. Rolf Ent and the collaboration are reassessing the experiment requirements

### **New Safety Coach Joins EH&S Department**

Ned Walker joined the EH&S Department on April 7, 2003. He is assigned to the Industrial Safety Group.

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### **ODH System**

ODH false alarms continue with changes in barometric pressure. Work is underway to identify a replacement ODH head for at least the linacs. The Safety Systems Group staff met with vendors from MSA, Sentry, and ATI. Lifecycle analysis shows that a replacement system will save over \$250k-\$400k over 20 years, depending on the number of heads replaced.

### **EP Room Cabinet Leak**

Earlier this month during EP cabinet operations, acid leakage inside the EP cabinet was observed. The leakage was confined to the cabinet. Operations were suspended and the leak flushed with DI water. A malfunction then occurred. The drain line was not draining the leak/rinsewater mix and the cabinet began to leak. The leak was confined and neutralized according to the SOP for the cabinet. Follow-up actions required include:

- Troubleshooting the drain failure
- Troubleshooting the cabinet leak (already a theory that when additional support features were added to the cabinet for the heavy SNS cavities, the supports were bored through the cabinet and the cabinet was not sealed)

Line Manager investigating the event is John Mammosser. The JLab IH, Patty Hunt, will provide EH&S technical assistance. A final report is pending.

### **Fire Detection Resolutions**

The EH&S Department staff, in coordination with Dave Kausch, Fire Protection Engineer, resolved several issues regarding laser interlocked smoke detectors and/or general occupancy detection in the Injector Test Cave/Control Room, FEL User Labs, and Trailers T53a-c. Several of the issues had been outstanding for 6-14 months. Our thanks to Dave for moving quickly to resolve all the issues and for his customer-focused approach!

## **Administration Division Notes for EH&S Committee**

*For meeting of 5/2/2003*

### **Facilities Management**

#### ***Projects with EH&S Implications***

- Central Chiller Utility (Energy project) – Trenching and underground pipe installation on the accelerator site started on 4/21. Subcontractor is forming and placing the concrete for AHU pads on the accelerator site. Work in Building 58's mechanical room continues. The chillers are scheduled for delivery the week of 5/5. . There have been two encounters with unmarked, direct-buried signal cable that was not detected by the locator service. There was no personnel injury potential.
- Re-roof Accelerator Service Buildings - After completion of the Central Chiller project, the HVAC units will be removed and the Service Buildings will be re-roofed with a foam roofing system. Design is in progress. (PM - Chandra)  
Est. Construction Start Date: 8/15/03
- Retention Pond - To facilitate future site developments, a retention pond is required for storm-water management. The selection of the A/E was completed on 4/18. A meeting to discuss details of the scope will be held on 5/5 (PM - Chandra)  
Estimated Design Start Date: 6/02/03  
Est. Construction Start Date: 2/02/04
- Traffic Modifications on the Accelerator Site – Change traffic signs and re-stripe crosswalk at the CHL. ECD: 5/23/03. (PMs – Boyes/Winslow)
- Dismantle Wooden Enclosure in the CHL East – Procurement documents will be forwarded by the end of July. (Note: This combustible structure has been identified during highly protected risk evaluations as being inconsistent with HPR criteria, though it has not degraded the CHL's overall HPR status.) ECD: 9/30/03. (PM – Chandra)
- Acid Neutralization System Building - The subcontractor is forming the slab and trenches (PM - Chandra) ECD: 6/20/03

### **Emergency Management**

A meeting of the E.M. Subcommittee was held on April 17. Agenda items include the peer review (August 6-7) and upcoming exercises.

### **EH&S Training**

Dr. Chandler has proposed changes in the Lab's training for automatic external defibrillators (AED). His proposal is based upon recent changes to Virginia rules on AEDs, and Dr. Chandler's recommendations will be distributed electronically to the EH&S Training Subcommittee. If there is consensus agreement, the changes will be adopted as soon as feasible. Otherwise, the issue will need to be on the next meeting's agenda.

## **Various Other Items**

### ***Crane hook collision in Test Lab***

Administration Division-managed electrical subcontractors were involved in a recent Test Lab crane mishap. They moved the crane without verifying the hook location. The hook had been left in a partially elevated position by the previous user, and the hook collided with an electronic enclosure and adjacent objects above the Cryomodule test facility (CMTF). Investigation and report preparation are in progress.

### ***NRC Oversight Meeting***

Administration Division EH&S participated in the closeout briefing by the representative from the NRC who was here in advance of the pending team visit that is planned in connection with the OSHA & NRC direct oversight initiative.

### ***EH&S Assistant***

Applications are being reviewed for the now vacant EH&S Assistant position (casual/student) in Admin that primarily supports ARC EH&S and Emergency Management activities. And *bon voyage* to Melissa Mills who served in this role so admirably.

### ***Compressed gases***

Procurement and Admin. EH&S were involved in a recent situation where a cylinder labeled as argon was reported by an Accel. group to actually contained nitrogen. The vendor responded by exchanging the last three Ar cylinders of that batch and analyzing the contents of the suspect cylinder. Their analysis and ours do not agree, but it is not certain at this point what other actions will follow.

### ***Oral medication vending machines***

Since they were installed a year or so ago, two of the oral medication vending machines have yielded a combined total of less than \$10 in sales. JLab's agreement with the vendor was that he had the prerogative to remove the machines should sales prove to be insufficient to justify the machine costs and time to service them. These two clearly met those criteria. The remaining machine in CEBAF Center has been used actively and will remain in place.



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## EH&S Reporting Activities for April 2003

- As of April 30<sup>th</sup>, Jefferson Lab had achieved **37** consecutive days without a lost-time injury. The Lab record is **455** consecutive days without a lost-time injury. There were no recordable injuries/illnesses in April.
- EH&S Reporting provided EH&S performance measure results and supporting information for the Midyear Performance Measures Report for the DOE/SURA performance-based contract. The performance measure results reflected the time period of the first six months of FY 2002. The midyear EH&S score was **97.6%**. Additional EH&S performance measure information is contained on the attached sheet.
- **Occurrence Reporting**
  - A draft Notification Report of an April 29<sup>th</sup> Test Lab event was prepared for the DOE occurrence reporting system (ORPS) as an “Off Normal” occurrence (the lowest of the three ORPS reporting levels). The Test Lab event involved qualified subcontractor personnel using the overhead crane without observing the crane hook. This resulted in some electrical conduit damage. The Notification Report will be provided to the ORPS following management review.
  - EH&S Reporting reviewed several draft documents from the upcoming DOE ORPS re-engineering initiative. The new ORPS is to become effective July 1, 2003. The current three ORPS reporting levels will be replaced by six reporting levels. Event causal analysis will still be required for five of the six reporting levels.
- EH&S Reporting prepared background material for the Jefferson Lab submission for the DOE FY 2005 ES&H Budget Call request from the Oak Ridge Operations Office (ORO). However, Office of Science (SC) direction was received that a response to this ES&H budget information request was not necessary.
- Carter Ficklen attended the DOE Spring Price-Anderson (PAAA) Meeting on April 16-17 in Las Vegas. The meeting focused on recent PAAA enforcement actions and potential new areas for PAAA rulemaking.
- EH&S Reporting conducted an OSHA Recordkeeping briefing for Medical Services staff on April 8<sup>th</sup>. Discussions were also held on case management opportunities under existing privacy and OSHA regulations.
- EH&S Reporting generated a draft technical appendix on special storage battery use for EH&S Manual Chapter 6210, *General Electrical Safety*. This document will allow closure of an open Work Smart Standards hazard issue.

- Progress was made on the joint Office of Assessment (OA) effort to prepare an SPCC training course for all staff and subcontractors involved with oil or oil products. This training should be available for beta testing soon.
- The need for a new Virginia Department of Environmental Quality general permit to address storm water discharges was identified. EH&S Reporting is working with Facilities Management to prepare the registration statement.

➤ **DOE Reviews**

- During April, ORO staff began a “For Cause Review of Contractor Electrical Safety” following several recent electrical safety incidents at the Oak Ridge reservation. The review covered twelve ORO electrical incidents since January 2002. Jefferson Lab had experienced three of the twelve incidents (the January 2002 severed buried electrical line, the February 2002 FEL electrical shock, and the October 2002 Vertical Test Area “near miss”) that will be covered in the ORO review. The ORO review of the Jefferson Lab incidents was conducted by a combination of information requests and conference calls. John Kelly, Administration Div. EH&S Officer, and Ed Martin, Electrical Safety Subcommittee Chair, were especially helpful in assisting with the Lab’s response to this ORO review. ORO plans to generate a final report in May.
- The DOE Site Office received SC direction in April to begin a review of Lab work permitting/planning processes. An April 25<sup>th</sup> initial meeting was held between Site Office and OA staff for preliminary discussions and an overview of Lab work permitting/planning processes. The Site Office is scheduled to submit review results to SC in mid-May.

➤ **Work Smart Standards (WSS) Set**

- Proposed 2002 changes to the WSS Set, including separating powered industrial trucks and golf cars into their own hazard issues, are working their way through the change process.
- EH&S Reporting is working with the Policy and Manuals Group to ensure new or modified hazards or standards become addressed appropriately in the EH&S Manual.

➤ **National Environmental Policy Act (NEPA)**

- CEBAF and FEL Upgrade Environmental Assessment (EA)
  - The DOE Site Office has finalized the team charter.
  - Proposed Action/Project Information Checklists are being prepared. The FEL draft checklist is nearing completion.
- EH&S Reporting is working with other laboratory staff to address other NEPA items, including actions related to the new CEBAF Center addition construction project.

**Physics Division**  
**EH&S Activities**  
**April**  
**2003**

For the month – The Hall A Group continued field testing and commissioning the first of two septum magnets for use in future experiments, with the first: E97-110. The Hall B Group continued drift chamber maintenance of the CEBAF Large Acceptance Spectrometer and readied equipment for continuance of experiment: e1-f. The Hall C Group began restart activities of the Short Orbital Spectrometer, which is a portion of halls' base equipment, and commissioning of newly installed experimental apparatus for experiment: E00-002. The EH&S Group priority was oversight and assistance to staff and the user community as required.

Experimental Readiness and Work Control Documents

Reference Jefferson Lab EH&S Manual Chapter 3120 – Experimental Review, and Chapter 3320 - Temporary Work Permits.

There was one new Temporary Operational Safety Procedures given final approval.

*PHY-03-005* “Rich Detector Testing”  
Hall A Group / Bldg. 90, Room 125.

There were two new Experiment Readiness Certificates and no new Operational Safety Procedures.

Hall A E97-110 “The GDH Sum Rule, the Spin Structure of  $^3\text{He}$  and the Neutron using Nearly Real Photons”  
Hall C E00-002 “ $F^N_2$  at Low  $Q^2$ ”  
Hall C E01-002 “Baryon Resonance Electroproduction at High Momentum Transfer”  
Hall C E00-116 “Measurement of Hydrogen and Deuterium Inclusive Resonance Cross Section at Intermediate  $Q^2$  for Parton-Hadron Duality Studies”  
Hall C E00-018 “Duality in Meson Electoproduction”

Inspections

Reference Jefferson Lab EH&S Manual Chapter 5100 - Internal Inspections.

Six scheduled formal inspections identified three new recordable action items; one of these items remains open. The area safety warden, Brian Kross, assisted division EH&S staff on at least one inspection of the Experimental Equipment Laboratory, Blg.90.

## **Physics Division EH&S Activities April 2003 (continued)**

### Area Safety Warden Meeting

Reference Jefferson Lab EH&S Manual Chapter 2220 – Landlord and Tenant EH&S Responsibilities.

The quarterly area safety wardens meeting was conducted on April 9<sup>th</sup> with three invited and attending guests: Christoph Leemann, Jefferson Laboratory Director, Barbara Morgan, Department of Energy, Site Office Safety and Security Manager, and Linda Even, Office of Assessment, Environmental Engineer.

Among a few of the thirteen items on the agenda: an overview by Linda of the Laboratory guidance on Spill Prevention, Control and Countermeasures, and announcement of an upcoming SPCC training opportunity. Also, the review of Jefferson Laboratory EH&S Manual Chapter 3210 – Hazard Identification and Characterization, Chapter 3220 Communication of Hazards to Employees and Users, and Chapter 3330 Stop-Work-Orders.

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